

## CLAIMS

We claim:

1        1. An apparatus for mounting computer components in an enclosure, the  
2        apparatus comprising:

3                at least one fastener coupled to a frame, the fastener being adapted for

4                connecting to an enclosure without requiring the use of a tool;

5                at least one guide pin coupled to the frame, the pin being adapted to

6                receive a computer component for attachment of the component to the

7                apparatus; and

8                a release member coupled to a frame, the release member being resilient

9                and being adapted for attaching a computer component to the

10               connection apparatus by engaging the computer component, wherein

11               manipulation of the release member releases the computer component

12               from the connection apparatus.

1        2. The apparatus of claim 1, wherein the apparatus does not require the use of  
2               tools for mounting computer components in an enclosure or releasing  
3               computer components from an enclosure.

1        3. The apparatus of claim 1, wherein the apparatus is adapted for attachment to  
2               at least one support structure in an enclosure by securing the  
3               apparatus to at least one hole in the support structure.

4. The apparatus of claim 1, wherein pressing the release member toward the fastener releases the computer component from the connection apparatus.
  5. The apparatus of claim 1, further comprising at least one resting ledge that supports the computer component while the component is attached to the apparatus.
  6. The apparatus of claim 1, wherein at least one fastener further comprises a release plunger slidably connected to the frame, wherein a tip portion of the plunger rests inside a hole in the frame and a spring biases the release plunger toward the fastener.
  7. The apparatus of claim 6, wherein pulling the release plunger away from the hole in the frame allows release of the apparatus from the enclosure.
  8. The apparatus of claim 1, wherein at least one fastener further comprises two front fastener arms and one rear fastener arm for attaching to holes in a support structure of an enclosure.
  9. The apparatus of claim 1, wherein the apparatus comprises two detachable parts, a first part comprising a first frame coupled to at least one fastener and at least one guide pin, and a second part comprising a second frame coupled to the release member.

10. The apparatus of claim 8, further comprising at least one tab coupled to the second frame to prevent substantial rotation of the computer component attached to the apparatus.

11. The apparatus of claim 1, further comprising a resting pocket for supporting the edge of the computer component on the apparatus.

12. The apparatus of claim 1, further comprising a pivotable bar that engages the computer component as mounting holes on the component slide onto at least one guide pin, wherein the pivotable bar pivots to secure the component against a frame of the mounting apparatus and a notched edge of the bar engages a threaded portion on the release member to lock the bar into position.

13. The apparatus of claim 12, further comprising at least one tab coupled to the second frame to prevent substantial rotation of the computer component attached to the apparatus.

14. A system for mounting computer components in an enclosure, the enclosure having at least one support member, the system comprising:

- a means for securing at least one computer component to a support member of the enclosure without requiring the use of tools, the means being further adapted for unsecuring the at least one computer component to a support member of the enclosure without requiring

7                   the use of tools, wherein the means is detachable from the support  
8                   member.

1                 15. The system of claim 10, wherein the means is attached and detached from  
2                   the support member without requiring the use of tools.

1                 16. A method for attaching computer components in an enclosure by attaching a  
2                   mounting apparatus to the enclosure and attaching a computer component to the  
3                   mounting apparatus that is adapted to receive computer components, the method  
4                   comprising:

5                   connecting a mounting apparatus to a support member of an enclosure by  
6                   attaching at least one fastener of the mounting apparatus to the  
7                   enclosure without the use of a tool;

8                   engaging a computer component with a least one guide pin of the  
9                   mounting apparatus that is adapted to receive computer components;  
10                  and

11                  securing the computer component to the mounting apparatus by engaging  
12                  the computer component with a release member of the mounting  
13                  apparatus without the use of the tool.

1                 17. The method of claim 16, wherein connecting a mounting apparatus to a  
2                   support member further comprises moving the mounting apparatus against the support  
3                   structure to slide two front fasteners and one back fastener into holes in the support  
4                   member of the enclosure.

1           18. The method of claim 16, wherein connecting a mounting apparatus to a  
2 support member further comprises moving the mounting apparatus against the support  
3 structure to slide a tip of a release plunger into a hole in the support member of the  
4 enclosure.

1           19. The method of claim 16, wherein engaging a computer component with at  
2 least one guide pin of the mounting apparatus further comprises moving the computer  
3 component against the mounting apparatus to slide two guide pins into mounting holes  
4 in the computer component.

1           20. The method of claim 16, wherein securing the computer component to the  
2 mounting apparatus by engaging the computer component with a release member of the  
3 mounting apparatus further comprises moving the computer component against the  
4 release member to press the release member toward the support structure.

1           21. The method of claim 20, wherein moving the computer component against  
2 the release member to press the release member toward the support structure further  
3 comprises moving the computer component to such a distance that the release member  
4 returns to its original position on the other side of the component, thereby securing the  
5 component between a frame of the mounting apparatus and the release member

1           22. The method of claim 16, further comprising resting the edge of the computer  
2 component on a ledge attached to a frame of the mounting apparatus.

1           23. The method of claim 16, wherein securing the computer component to the  
2 mounting apparatus further comprises using at least one tab to secure the release member

3       in a position that secures the computer component on the mounting apparatus and  
4       prevents substantial rotation of the computer component.

1           24. The method of claim 16, further comprising moving the edge of the  
2       computer component into a resting pocket in the mounting apparatus to engage mounting  
3       holes in the component with two tabs to secure the component onto the mounting  
4       apparatus.

1           25. The method of claim 16, further comprising pivoting a bar to engage the  
2       computer component and slide mounting holes in the component onto at least one guide  
3       pin, wherein the bar pivots to secure the component against a frame of the mounting  
4       apparatus and a notched edge of the bar engages a threaded portion on the release  
5       member to lock the bar into position.

1           26. A method for detaching computer components in an enclosure by detaching  
2       a computer component from a mounting apparatus that is adapted to receive computer  
3       components and detaching a mounting apparatus from the enclosure, the method  
4       comprising:

5               unsecuring the computer component from a mounting apparatus that is  
6       adapted to receive computer components by manipulating a release  
7       member of the mounting apparatus to disengage the computer  
8       component without the use of a tool;  
9               disengaging the computer component from at least one guide pin of the  
10      mounting apparatus; and

11 disconnecting a mounting apparatus from a support member of an  
12 enclosure by detaching at least one fastener of the mounting apparatus  
13 from the enclosure without the use of the tool.

1 27. The method of claim 27, wherein unsecuring the computer  
2 component from a mounting apparatus by manipulating a release member further  
3 comprises pressing the release member toward the support member to slide the computer  
4 component away from the mounting apparatus.

1 28. The method of claim 28, wherein pressing the release member toward the  
2 support member to slide the component away from the mounting apparatus further  
3 comprises the release member returning to the original position once the component has  
4 moved a certain distance away from the mounting apparatus.

1 29. The method of claim 27, wherein disengaging the computer component from  
2 at least one guide pin of the mounting apparatus further comprises moving the computer  
3 component away from the apparatus to slide mounting holes on the component off of  
4 two guide pins of the mounting apparatus.

1 30. The method of claim 27, wherein disconnecting a mounting apparatus from a  
2 support member of an enclosure by detaching at least one fastener of the mounting  
3 apparatus from the enclosure further comprises pulling a release plunger away from the  
4 support structure to slide a tip of the plunger out of a hole in the support structure.

1 31. The method of claim 27, wherein disconnecting a mounting apparatus from a  
2 support member of an enclosure by detaching at least one fastener of the mounting  
3 apparatus from the enclosure further comprises moving the computer component against

4       the support structure to slide two front fasteners and one back fastener out of holes in the  
5       support structure

1           32. The method of claim 27, further comprising pressing at least one tab toward  
2       the mounting apparatus to release the computer component and move the edge of the  
3       computer component out of a resting pocket in the mounting apparatus.

1           33. The method of claim 27, further comprising pivoting a bar to release the  
2       computer component and slide mounting holes in the component off of at least one guide  
3       pin, wherein pressing on the release member disengages a notched edge of the bar from a  
4       threaded portion on the release member to allow the bar to pivot.